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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FISCHER, JUSTIN R	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/533,820	TAKAGI, SHIGEMASA	
	Examiner	Art Unit	
	Justin R. Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-20,24 and 25* is/are rejected.

7)☒ Claim(s) *21-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5305,91306*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 13, 15, 18, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Jardine (JP 2001-63310, of record). The English translation has been provided and will be relied upon below.

As best depicted in Figures 1 and 2, Jardine discloses a tire construction formed with at least one spirally wound belt layer 7, wherein the reinforcing elements of said layer exhibit a first region of low modulus and a second region of higher modulus (see example c in Figure 4: modulus increases beyond 2% elongation).

Regarding claim 15, said reinforcing elements are described as being hybrid cords (nylon and aramid) (Page 4 of translation).

With respect to claim 18, the tire of Jardine includes a radial carcass ply or body ply 4 and a pair of crossed belt layers 5,6, wherein said crossed belt layers are formed

of reifnrocing elements having an inclination on the order of 30 degrees with respect to the circumferential direction of the tire (Pages 7, 11, and 13 of translation).

Regarding claim 24, Figure 1 of Jardine expressly depicts the end of the spirally wound belt layer 7 as cover the side ends of the underlying belt layers.

3. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakasaki (JP 05000604). As best depicted in Figures 1 and 6, Nakasaki is directed to a radial tire construction having a spirally wound belt layer on the radially outside of the carcass/body assembly. In regards to the modulus of the cords that comprise said spirally wound belt layer, Figure 6 (example b) expressly depicts a first modulus in the region below 1% elongation and a second, higher modulus in the region greater than 1% elongation.

As to claim 14, Figure 6 of Nakasaki clearly depicts the claimed elongation at 20 N and the claimed tensile load at an elongation of 3%.

With respect to claim 15, the cord of Nakasaki can be formed as a hybrid cord comprising nylon and aramid (Paragraphs 17 and 18).

4. Claims 13, 16-18, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyazaki (US 6,926,053). As best Figures 1 and 2, Miyazaki is directed to a pneumatic, radial tire construction comprising a zero degree belt layer 9, wherein said layer is formed of cords 10 having a low modulus part YL and a high modulus part YH (Column 2, Lines 40-45).

With respect to claims 16 and 17, the cords 10 are made of steel filaments and it is preferable that some of the filaments that make the cord are waved (Column 3, Lines 30-50).

As to claim 18, the tire of Miyazaki comprises a radial carcass 6 and a pair of belt layers 7a, 7b, wherein the cords of the belt layers are inclined between 10 and 35 degrees with respect to the circumferential direction of the tire.

Regarding claim 24, Figure 1 depicts the belt layer 9 as covering the ends of the underlying belt structure.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 19 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Jardine. Jardine suggests a tire construction comprising "at least one" spirally wound, zero degree layer formed of hybrid cords (Page 2 of translation). The reference further teaches a plurality of arrangements for the "at least one" zero degree layer, including between the body and the belts, between the belts, radially inward of the body, and radially outward of the belts (Figures 1 and 5-7). While the reference fails to expressly describe a construction in which such a layer is positioned outward of the belts and between the belts and the body, the respective arrangements are individually suggested by Jardine and in view of the suggestion to include "at least one" ply, one of ordinary

skill in the art at the time of the invention would have found it obvious to form the claimed tire construction. It is emphasized that the reference does suggest the use of multiple zero degree layers and applicant has not provided a conclsuive showing of unexpected results to establish a criticality for the claimed arrangement.

Lastly, in regards to the widths of the belt layers, the reference only generally depicts the radially outer belt layer as being slightly smaller than the radially inner belt layer. It is well recognized in the tire industry that belt layers are commonly staggered from one another in order to avoid the buildup of stresses at the belt ends. Furthermore, the claimed relationship between the belt layers is consistent with conventional tire construction in that adjacent belt layers are commonly staggered between the broad range of the claimed invention (especially the higher values near 70%). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the belt layers in accordance to the claimed invention.

With respect to claim 25, Figure 1 of Jardine expressly depicts the end of the spirally wound belt layer 7 as cover the side ends of the underlying belt layers.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jardine as applied in claim 19 above and further in view of Tokunaga (JP 6-191219) and Caretta (US 4,140,168). As detailed above, Jardine substantially teaches the claimed tire construction, including multiple zero degree layers formed of hybrid cords. The reference, however, is silent as to forming the shoulder regions with an increased density. However, it is extremely well known in the tire industry that tires commonly

suffer from uneven tread wear due to the high amounts of stresses experienced at the shoulder regions. In order to eliminate uneven tread wear, zero degree layers are commonly formed with increased densities at the shoulder regions, as shown for example by Tokunaga and Caretta. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to provide the zero degree layers of Jardine with increased densities at the shoulder regions.

Allowable Subject Matter

8. Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin R Fischer
Primary Examiner
Art Unit 1733

JRF
October 6, 2006